I. AMENDMENTS TO THE CLAIMS

Please find below a listing of claims that will replace all prior versions, and listings, of claims in the application:

Listing of claims:

1. (currently amended) A router supporting multiple routing protocols, said router comprising:
   a. an interface layer including a plurality of I/O controllers, each I/O controller implementing an I/O port;
   b. a switching layer in communication with said interface layer for selectively establishing signal pathways between said I/O ports; and
   c. a routing layer in communication with said interface layer, said routing layer ~~having at least first and second~~ including a plurality of routing protocol computing entities, each routing protocol computing entity being associated with a ~~distinct subset~~ respective set of at least one routing protocol ~~from a common set of routing protocols~~ and including:
      i. a respective CPU; and
      ii. a respective data storage medium in communication with said CPU~~;~~
      ~~iii.~~ and storing program data ~~stored in said data storage medium~~ for execution by said CPU~~;~~
   ~~d.~~ ~~the program data in the data storage medium of each~~ to cause said routing protocol computing entity ~~effecting~~ to effect management of one or more peering sessions with remote routing devices according to [[only]] the at least one routing protocol in the ~~associated subset~~ set associated with said routing protocol computing entity~~; when executed by the CPU of the respective routing protocol computing entity.~~

   wherein the set of at least one routing protocol associated with a first one of said routing protocol computing entities is different from the set of at least one routing protocol associated with a second one of said routing protocol computing entities.

2. (original) A router as defined in claim 1, wherein each routing protocol computing entity is operative to maintain simultaneously a plurality of peering sessions with remote routing devices.

3. (currently amended) A router as defined in claim [[2]] 1, wherein each routing protocol computing entity ~~exchanges~~ is operative to exchange data with a remote routing device through said interface layer during a peering session.

4. (currently amended) A router as defined in claim 3, wherein the peering session includes a transfer of route information data from said router to [[a]] the remote routing device.

5. (currently amended) A router as defined in claim 4, wherein the peering session includes a transfer of route information data from [[a]] the remote routing device to said router.

6. (currently amended) A router as defined in claim 5, wherein the data storage medium of ~~said first~~ at least one of said plurality of routing protocol computing ~~entity~~ entities stores a local routing table holding at least one inbound route database derived at least in part from route information data transferred from a remote routing device to said router.

7. (currently amended) A router as defined in claim 6, wherein said ~~first~~ at least one of said plurality of routing protocol computing ~~entity~~ entities ~~applies~~ is operative to apply an inbound policy processing on the route information data transferred from a remote routing device during generation of [[the]] said at least one inbound route database.

8. (currently amended) A router as defined in claim [[7]] 5, wherein the data storage medium of at least one of said plurality of routing protocol computing ~~entity~~ entities stores a local routing table that holds a best route database, said ~~first~~ at least one routing protocol computing entity ~~applies~~ being operative to apply an outbound policy processing on ~~the~~ its best route database to generate at least one outbound route database, said ~~first~~ at least one routing protocol computing entity being operative to transfer route information data from its said at least one outbound route database to a remote routing device.

9. (currently amended) A router as defined in claim [[8]] 1, wherein the data storage medium of each routing protocol computing entity stores a respective local routing table holding at least one respective inbound route database derived from route information data transferred from a remote routing device to said router.

10. (currently amended) A router as defined in claim 9, wherein each routing protocol computing entity ~~applies~~ is operative to apply an inbound policy processing on the route information data transferred from a remote routing device during generation of [[the]] said at least one inbound route database.

11. (currently amended) A router as defined in claim 10, wherein the local routing table of each routing protocol computing entity holds a respective best route database, ~~the at least one routing protocol in each subset applies~~ each routing protocol computing entity being operative to apply an outbound policy processing on the best route database of said local routing table of said routing protocol computing entity to generate at least one respective outbound route database, each routing protocol computing entity being operative to transfer route information data from said at least one outbound route database of said routing protocol computing entity to a remote routing device.

12. (currently amended) A router as defined in claim 11, wherein said routing layer includes a control computing entity in data communicative relationship with each routing protocol computing entity, said control computing entity including:

a. a respective CPU; and

b. a respective data storage medium in communication with said CPU of said control computing entity and storing;

~~c. a~~ program data ~~stored in said data storage medium~~ for execution by said CPU of said control computing entity;

~~d.~~ and a master routing table ~~stored in said data storage medium~~.

13. (original) A router as defined in claim 12, wherein the program data stored in the data storage medium of said control computing entity implements a routing table manager for managing said master routing table.

14. (currently amended) A router as defined in claim 13, wherein each routing protocol computing entity is in communication with said control computing entity to transfer to the data storage medium of said control computing entity data from the at least one inbound route database in said routing protocol computing entity.

15. (currently amended) A router as defined in claim 14, wherein said routing table manager is operative to apply a master policy processing on data received from the respective at least one inbound ~~routing~~ route database in each routing protocol computing entity to generate the master routing table.

16. (currently amended) A router as defined in claim 15, wherein said master policy processing includes merging the data in the inbound ~~routing~~ route databases from ~~said first and said second~~ at least two of said routing protocol computing entities to produce merged inbound routing data.

17. (original) A router as defined in claim 16, wherein the merged inbound routing data includes information mapping destinations and routes to the destinations.

18. (original) A router as defined in claim 17, wherein the merged inbound routing data includes a plurality of destinations and a set of routes associated with each destination of the plurality of destinations, said master policy processing includes discarding from each set of routes a plurality of routes and retaining only a subset of the set of routes.

19. (currently amended) A router as defined in claim 18, wherein said control computing entity is operative to transfer to the data storage medium of [[said]] a first one of said routing protocol computing ~~entity~~ entities at least a portion of the master routing data to form the best route database in the data storage medium of said first one of said routing protocol computing ~~entity~~ entities.

20. (currently amended) A router as defined in claim 19, wherein said control computing entity is operative to transfer to the data storage medium of [[said]] a second one of said routing protocol computing ~~entity~~ entities at least a portion of the master routing data to form the best route database in the data storage medium of said second one of said routing protocol computing ~~entity~~ entities.

21. (currently amended) A router as defined in claim [[18]] 12, wherein each I/O controller includes a forwarding processor, when a data packet is received at the I/O controller, said forwarding processor determining an I/O port of said interface layer through which the data packet is to be released, said forwarding processor including a data storage medium holding a forwarding table, said forwarding table including data derived from said master routing table.

22. (currently amended) A router as defined in claim 1, wherein the ~~subset~~ set of at least one routing protocol associated with [[said]] a first one of said routing protocol computing ~~entity~~ entities contains BGP, and wherein the ~~subset~~ set of at least one routing protocol associated with [[said]] a second one of said routing protocol computing ~~entity~~ entities contains OSPF.

23. (currently amended) A router, comprising:

a. an interface layer including a plurality of I/O controllers, each I/O controller implementing an I/O port;

b. a switching layer in communication with said interface layer for selectively establishing signal pathways between said I/O ports; and

c. a routing layer in communication with said interface layer, said routing layer ~~having at least first and second~~ including a plurality of routing protocol computing entities, each routing protocol computing entity being associated with a respective routing protocol and including:

i. a respective CPU; and

ii. a respective data storage medium in communication with said CPU;

~~iii.~~ ~~a~~ and storing program data ~~stored in said data storage medium~~ for execution by said CPU;

~~d. the program data in the data storage medium of said first~~ to cause said routing protocol computing entity ~~effecting~~ to effect management of one or more peering sessions with remote routing devices according to ~~a first~~ the routing protocol associated with said routing protocol computing entity, ~~when executed by the CPU of said first routing protocol computing entity;~~

~~e. the program data in the data storage medium of said second routing protocol computing entity effecting management of one or more peering sessions with remote routing devices according to a second routing protocol when executed by the CPU of said second routing protocol computing entity;~~

~~f. the first routing protocol being the same as the second routing protocol;~~

~~g.~~ said management of one or more peering sessions ~~effected by the program data in the data storage medium of said first routing protocol computing entity~~ comprising maintaining in [[the]] said data storage medium ~~of said first routing protocol computing entity one or more inbound route databases~~ one or more route databases; ~~containing route information derived from information received during one or more peering sessions managed by said first routing protocol computing entity;~~

~~h. said management of one or more peering sessions effected by the program data in the data storage medium of said second routing protocol computing entity comprising maintaining in the data storage medium of said second routing protocol computing entity one or more inbound route databases containing route information derived from information received during one or more peering sessions managed by said second routing protocol computing entity;~~

~~i. said one or more inbound route databases of said first routing protocol computing entity not containing at least some of the route information contained in said one or more inbound route databases of said second routing protocol computing entity.~~

wherein the one or more route databases maintained in the data storage medium of a first one of said routing protocol computing entities contain information on at least one route for which there is no information in the one or more route databases maintained in the data storage medium of a second one of said routing protocol computing entities.

24. (currently amended) A router as defined in claim 23, wherein the [[first]] routing protocol associated with said first one of said routing protocol computing entities and the routing protocol associated with said second one of said routing protocol computing entities ~~and the second routing protocol~~ are distance vector protocols.

25. (currently amended) A router as defined in claim 23, wherein the [[first]] routing protocol associated with said first one of said routing protocol computing entities and the routing protocol associated with said second one of said routing protocol computing entities ~~and the second routing protocol~~ are link state protocols.

26. (currently amended) A router as defined in claim 24, wherein the first one of said routing protocol computing ~~entity~~ entities is capable of establishing peering sessions with a first set of remote routing devices, the second one of said routing protocol computing ~~entity~~ entities is capable of establishing peering sessions with a second set

of remote routing devices, the first set of remote routing devices excluding at least one routing device that belongs to the second set of routing devices.

27. (original) A router as defined in claim 26, wherein the first set of remote routing devices excludes any remote routing device from the second set.

28. (original) A router as defined in claim 27, wherein the first and the second sets of remote routing devices are mutually exclusive sets.

29. (currently amended) A router as defined in claim 25, wherein the first one of said routing protocol computing ~~entity~~ entities is capable of establishing peering sessions with remote routing devices from a first area, the second one of said routing protocol computing ~~entity~~ entities is capable of establishing peering sessions with remote routing devices from a second area, the first area being different from the second area.

30. (currently amended) A router as defined in claim [[23]] 56, wherein ~~said first and second routing protocols are~~ the routing protocol associated with each of said first one of said routing protocol computing entities and said second one of said routing protocol computing entities is BGP.

31. – 34. (previously cancelled)

35. (previously presented) A router, comprising:

a. an interface layer including a plurality of I/O controllers, each I/O controller implementing an I/O port;

b. a switching layer in communication with said interface layer for selectively establishing signal pathways between said I/O ports;

c. a routing layer in communication with said interface layer, said routing layer being capable of managing at least one peering session with a remote routing device, the peering session including the exchange of messages with the

remote routing device through one of the I/O controllers, the peering session being comprised of a plurality of tasks;

d. the one I/O controller implementing a peering session assist module,

e. said peering session assist module being capable of performing some of the tasks of the peering session autonomously from said routing layer;

f. said routing layer being capable of performing tasks of the peering session other than the tasks performed by the peering session assist module;

wherein the tasks performed by the peering session assist module include authenticating messages received from the remote routing device.

36. – 37. (previously cancelled)

38. (currently amended) A router, comprising:

a. an interface layer including a plurality of I/O controllers, each I/O controller implementing an I/O port;

b. a switching layer in communication with said interface layer for selectively establishing signal pathways between said I/O ports;

c. a routing layer in communication with said interface layer;

d. each I/O controller implementing an LSA entity, said LSA entity including an LS database, said LSA entity being responsive to an LSA message from a remote routing device including LS information to:

i. update said LS database; and

ii. forward the LS information to said routing layer[[;]].

~~iii. forward the LS information to at least another I/O controller of said interface layer.~~

39. (original) A router as defined in claim 38 wherein said LSA entity is operative to verify, upon reception of the LSA message, whether the LS information is already present in said LS database and in the affirmative to discard the LSA message.

40. (original) A router as defined in claim 39, wherein said LSA entity is responsive to reception of LS information received from another I/O controller of said interface layer to forward an LSA message including the LS information to a remote routing device.

41. (currently amended) A router as defined in claim 38, wherein said routing layer includes:

a. a control computing entity in data communicative relationship with each I/O controller, said control computing entity[[,]] including:

i. a CPU;

ii. a data storage medium in communication with said CPU;

iii. a master routing table stored in said data storage medium, said master routing table holding a master routing database derived at least in part from the LS database of at least one of said I/O controllers;

iv. program data in said data storage medium to implement a main routing table manager to manage said master routing table;

b. a backup computing entity in data communicative relationship with at least one of said I/O controller<u>s</u>, said backup computing entity including:

i. a CPU;

ii. a data storage medium in communication with the CPU of said backup computing entity;

iii. program data in the data storage medium of said backup computing entity for execution by the CPU of said backup computing entity to implement a main routing table manager;

~~iv.~~ said backup computing entity being responsive to an operational failure of said control computing entity to:

1. transfer information from at least one of said I/O controllers to re-build the LS database;

2. enable the program data in the data storage medium of said backup computing entity to act as a main routing table manager.

42. – 49. (cancelled)

50. (currently amended) A router as defined in claim 1, wherein the ~~subset~~ respective set of at least one routing protocol associated with ~~said first~~ each of said routing protocol computing ~~entity~~ entities contains exactly one routing protocol. ~~and the subset of at least one routing protocol associated with said second routing protocol computing entity contains exactly one routing protocol.~~

51. (currently amended) A router as defined in claim 1, wherein the ~~subset~~ set of at least one routing protocol associated with said first one of said routing protocol computing ~~entity~~ entities and the ~~subset~~ set of at least one routing protocol associated with said second one of said routing protocol computing ~~entity~~ entities are mutually exclusive ~~subsets~~ sets.

52. (new) A router as defined in claim 1, wherein the data storage medium of each routing protocol computing entity holds a respective local routing table storing a respective inbound routing database derived from route information data transferred from a remote routing device during a peering session managed by said routing protocol computing entity, wherein said routing layer includes:

- a control computing entity in data communicative relationship with each routing protocol computing entity, said control computing entity including:
  - i. a respective CPU; and
  - ii. a respective data storage medium in communication with the CPU of said control computing entity and storing:
    - a master routing table holding a master routing database derived at least in part from the respective inbound routing database of each routing protocol computing entity; and
    - program data for execution by the CPU of said control computing entity to implement a routing table manager to manage said master routing table;

- a backup computing entity in data communicative relationship with each routing protocol computing entity and with said control computing entity, said backup computing entity including:
  i. a respective CPU; and
  ii. a respective data storage medium in communication with the CPU of said backup computing entity and storing program data for execution by the CPU of said backup computing entity to cause said backup computing entity to be responsive to an operational failure of said control computing entity to:
    1. download the respective inbound routing database of each routing protocol computing entity; and
    2. rebuild the master routing database at least in part from the respective inbound routing database downloaded from each routing protocol computing entity.

53. (new) A router as defined in claim 1, wherein the data storage medium of each routing protocol computing entity holds a respective local routing table storing a respective inbound routing database derived from route information data transferred from a remote routing device during a peering session managed by said routing protocol computing entity, wherein said routing layer includes:

- a control computing entity in data communicative relationship with each routing protocol computing entity, said control computing entity including:
  i. a respective CPU; and
  ii. a respective data storage medium in communication with the CPU of said control computing entity and storing:
    - a master routing table holding a master routing database derived at least in part from the respective inbound routing database of each routing protocol computing entity; and
    - program data for execution by the CPU of said control computing entity to implement a routing table manager to manage said master routing table;

- a backup computing entity in data communicative relationship with each routing protocol computing entity and with said control computing entity, said backup computing entity including:
  i. a respective CPU; and
  ii. a respective data storage medium in communication with the CPU of said backup computing entity and storing program data for execution by the CPU of said backup computing entity to cause said backup computing entity to be responsive to an operational failure of a particular one of said routing protocol computing entities to:
    1. transfer information from said master routing table to the data storage medium of said backup computing entity to rebuild at least partially the local routing table of said particular one of said routing protocol computing entities; and
    2. cause said backup computing entity to effect management of one or more peering sessions with remote routing devices according to the at least one routing protocol in the set associated with said particular one of said routing protocol computing entities.

54. (new) A router as defined in claim 23, wherein said routing layer includes:
- a control computing entity in data communicative relationship with each routing protocol computing entity, said control computing entity including:
  i. a respective CPU; and
  ii. a respective data storage medium in communication with the CPU of said control computing entity and storing:
    - a master routing table holding a master routing database derived at least in part from the respective one or more route databases of each routing protocol computing entity; and
    - program data for execution by the CPU of said control computing entity to implement a routing table manager to manage said master routing table;

- a backup computing entity in data communicative relationship with each routing protocol computing entity and with said control computing entity, said backup computing entity including:
  i. a respective CPU; and
  ii. a respective data storage medium in communication with the CPU of said backup computing entity and storing program data for execution by the CPU of said backup computing entity to cause said backup computing entity to be responsive to an operational failure of said control computing entity to:
    1. download the respective one or more route databases of each routing protocol computing entity; and
    2. rebuild the master routing database at least in part from the respective one or more route databases downloaded from each routing protocol computing entity.

55. (new) A router as defined in claim 23, wherein said routing layer includes:
- a control computing entity in data communicative relationship with each routing protocol computing entity, said control computing entity including:
  i. a respective CPU; and
  ii. a respective data storage medium in communication with the CPU of said control computing entity and storing:
    - a master routing table holding a master routing database derived at least in part from the respective one or more route databases of each routing protocol computing entity; and
    - program data for execution by the CPU of said control computing entity to implement a routing table manager to manage said master routing table;
- a backup computing entity in data communicative relationship with each routing protocol computing entity and with said control computing entity, said backup computing entity including:
  i. a respective CPU; and

ii. a respective data storage medium in communication with the CPU of said backup computing entity and storing program data for execution by the CPU of said backup computing entity to cause said backup computing entity to be responsive to an operational failure of a particular one of said routing protocol computing entities to:

1. transfer information from said master routing table to the data storage medium of said backup computing entity to rebuild at least partially the respective one or more route databases of said particular one of said routing protocol computing entities; and
2. cause said backup computing entity to effect management of one or more peering sessions with remote routing devices according to the routing protocol associated with said particular one of said routing protocol computing entities.

56. (new) A router as defined in claim 23, wherein the routing protocol associated with said first one of said routing protocol computing entities is the same as the routing protocol associated with said second one of said routing protocol computing entities.

57. (new) A router as defined in claim 54, wherein the routing protocol associated with said first one of said routing protocol computing entities is the same as the routing protocol associated with said second one of said routing protocol computing entities.

58. (new) A router as defined in claim 55, wherein the routing protocol associated with said first one of said routing protocol computing entities is the same as the routing protocol associated with said second one of said routing protocol computing entities.